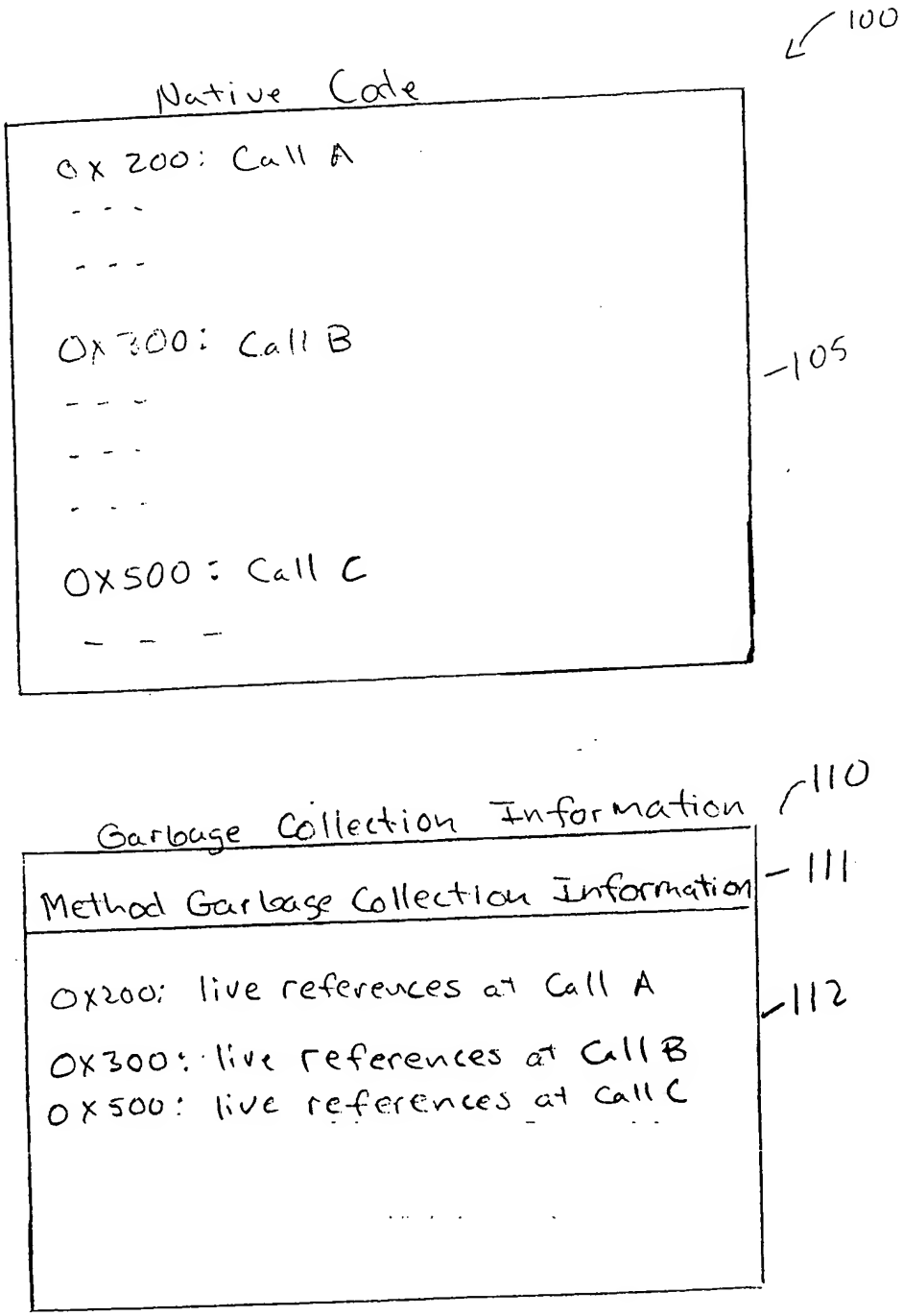

Fig. 1
Prior Art

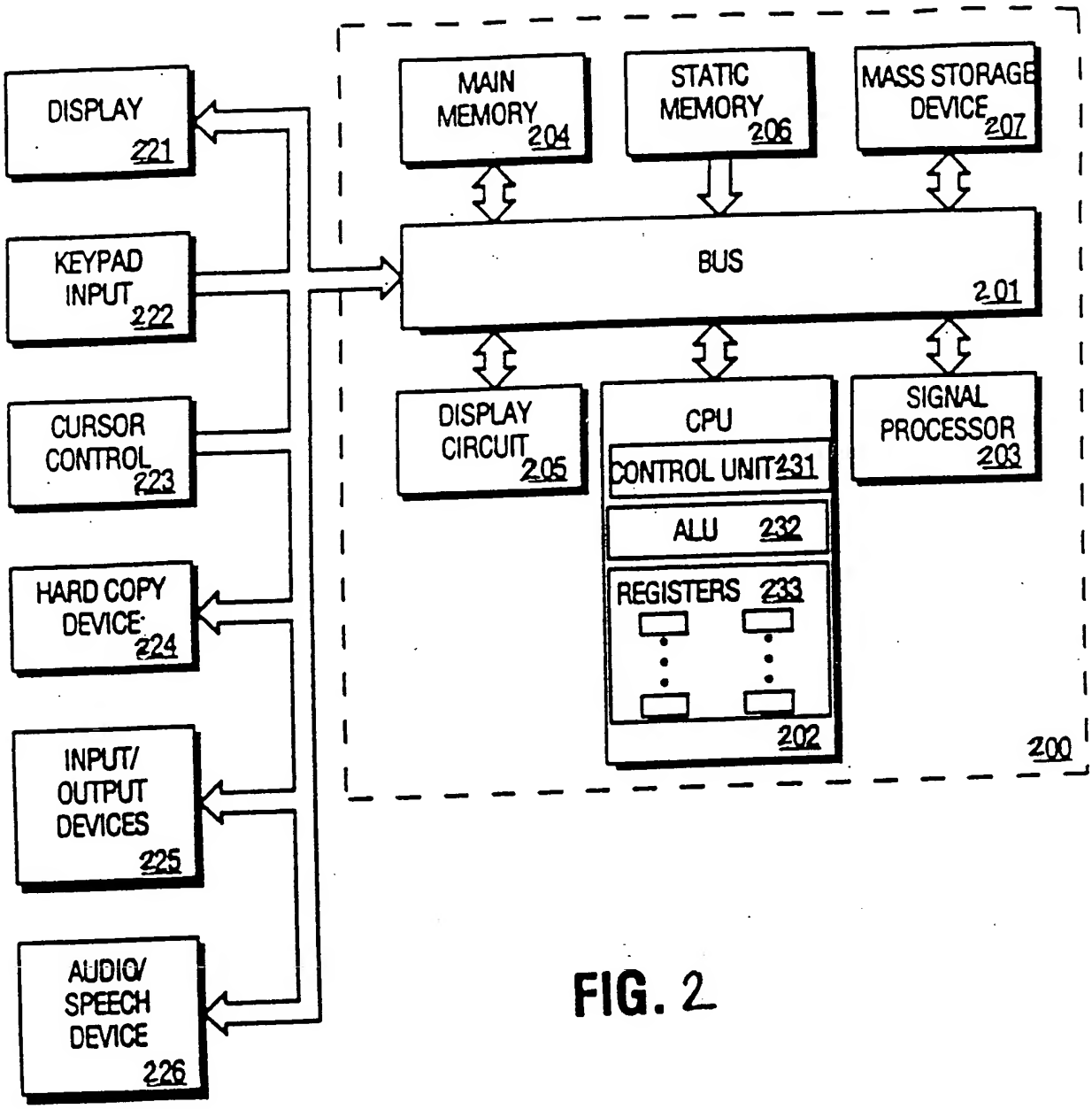
DISPLAY
221
KEYPAD
INPUT
222
CURSOR
CONTROL
223
HARD COPY
DEVICE
224
INPUT/
OUTPUT
DEVICES
225
AUDIO/
SPEECH
DEVICE
226
MAIN
MEMORY
204
STATIC
MEMORY
206
MASS STORAGE
DEVICE
207
BUS
201
DISPLAY
CIRCUIT
205
CPU
CONTROL UNIT
231
ALU
232
REGISTERS
233
202
SIGNAL
PROCESSOR
203
200

FIG. 2

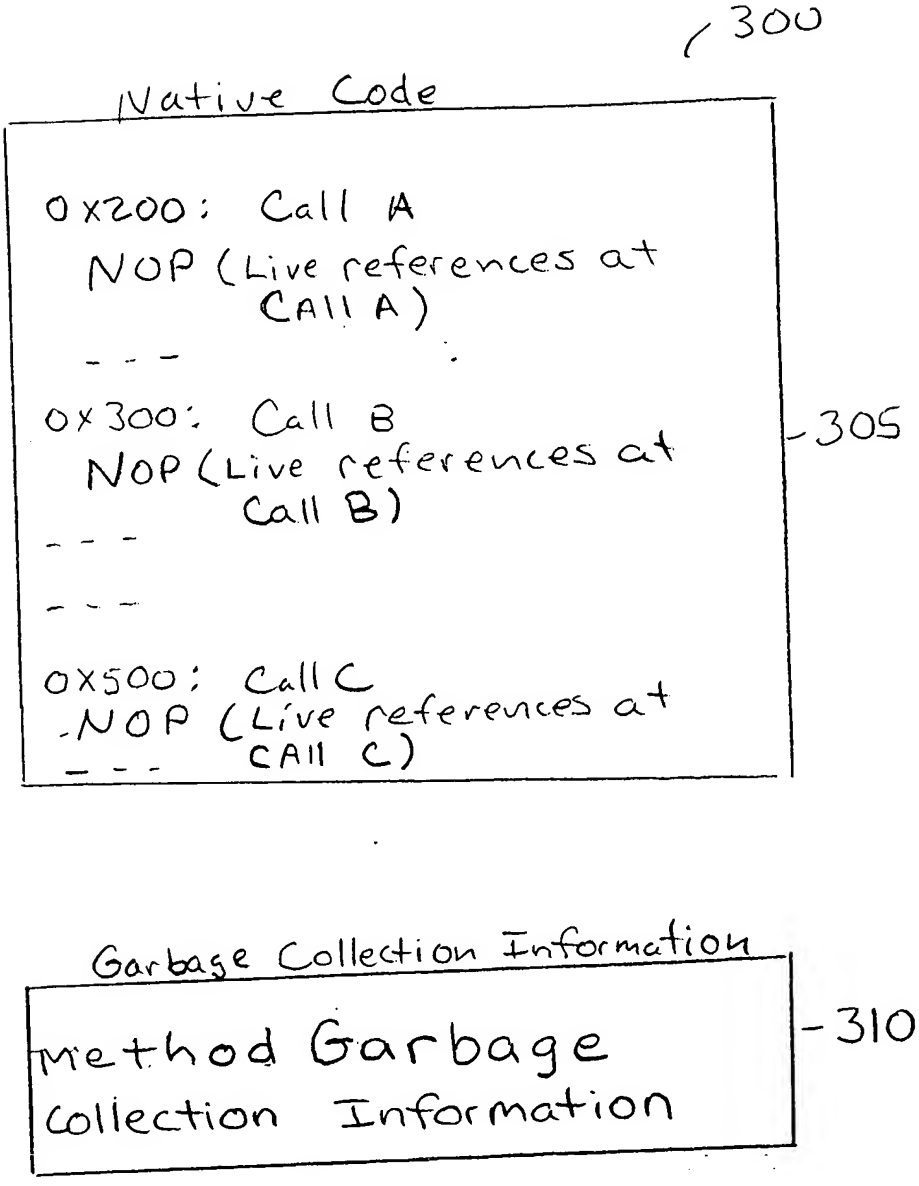
300
Native Code
0x200: Call A
NOP (Live references at Call A)
- - -
0x300: Call B
NOP (Live references at Call B)
- - -
- - -
0x500: Call C
NOP (Live references at Call C)
- - -
305
Garbage Collection Information
Method Garbage Collection Information
310

Fig. 3

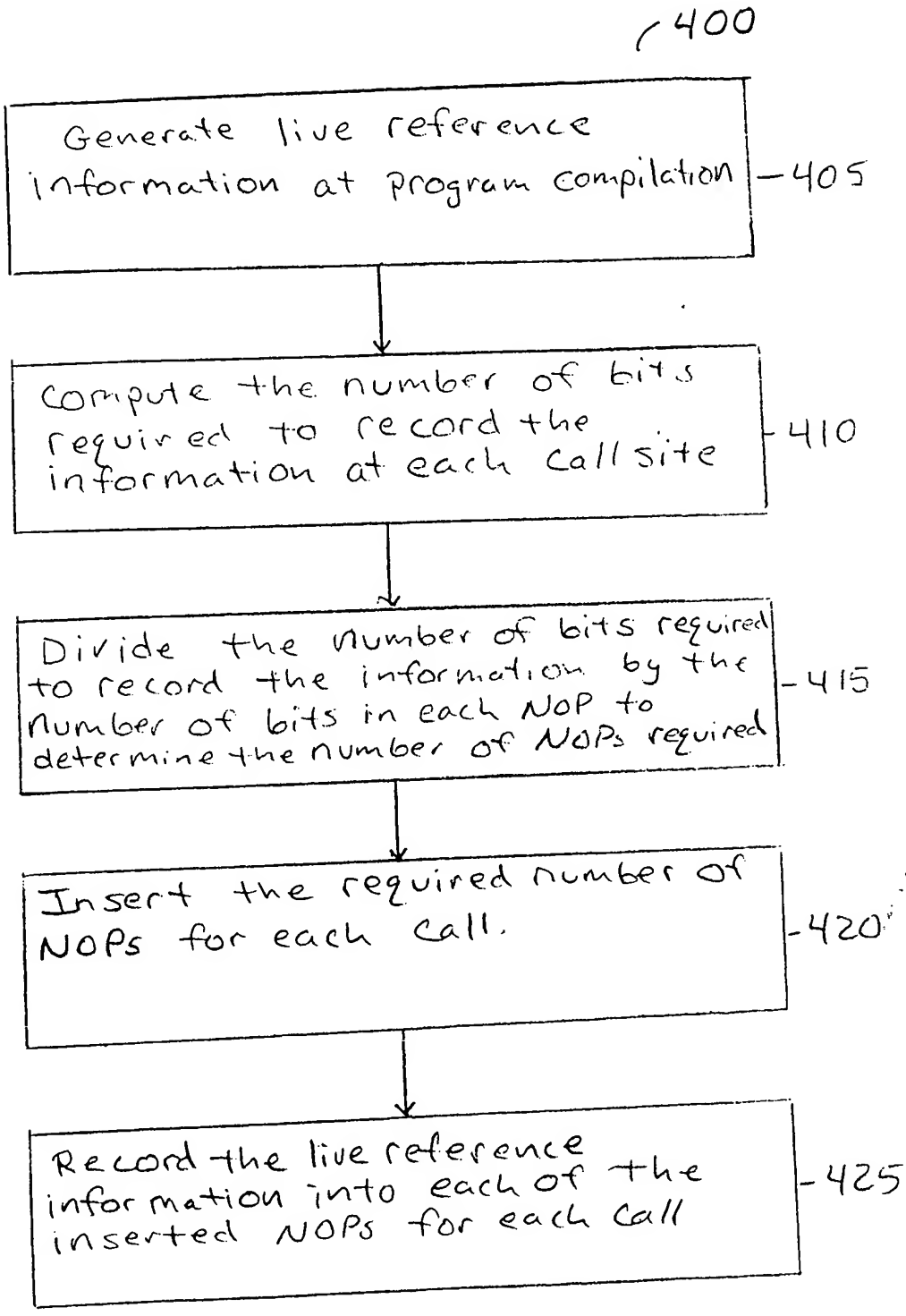
400
Generate live reference information at program compilation
405
Compute the number of bits required to record the information at each call site
410
Divide the number of bits required to record the information by the number of bits in each NOP to determine the number of NOPs required
415
Insert the required number of NOPs for each call.
420
Record the live reference information into each of the inserted NOPs for each call
425

Fig. 4